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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chad Dow

Examiner: Arpad F. Kovacs

Serial No.: 10/601,511

Group Art Unit 3671

Filed: 23 June 2003

(Atty. Ref. No. 16429-US)

For: STRAW CHOPPER BLADE

Moline, IL 61265

14 June 2006

APPLICANT'S APPEAL BRIEF

Mail Stop Appeal Brief-Patents

The Commissioner of Patents and Trademarks

PO Box 1450

Alexandria, VA 22313-1450

Sir:

Real Party in Interest

The real party in interest is Deere & Company, the assignee of the present invention, which assignment was recorded at reel and frame 14224/0988.

Related Appeals and Interferences

None.

Status of Claims

Claims 1 and 3-14 are currently pending in the above-identified application. Claims 1 and 3-14 stand finally rejected by the examiner in the Office Action of December 9, 2005. No claims are allowed. A correct copy of the claims is found in the attached appendix. Claims 1 and 3-14 are being appealed herein.

Status of Amendments

There is an outstanding Amendment After Final that was filed on May 09, 2006.

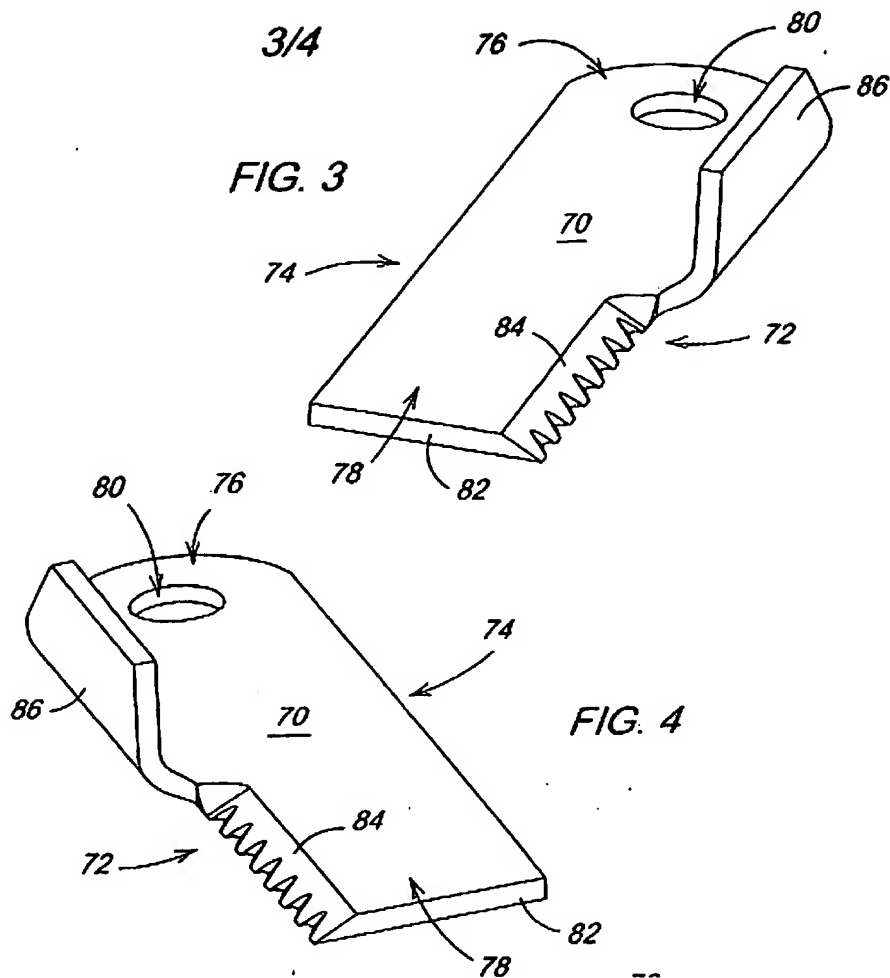
This outstanding Amendment After Final amends claims 5, 6 and 8 (non-substantive) in response to the Examiner's Objection to the Claims.

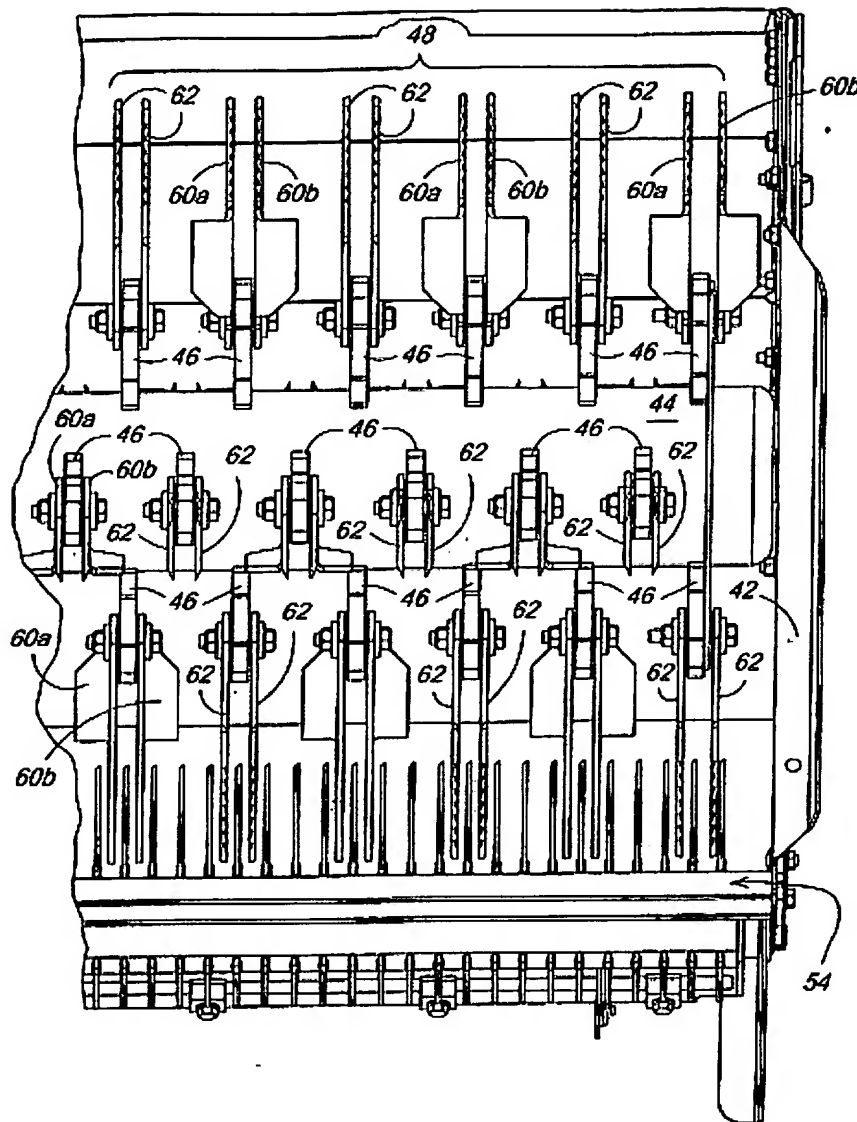
Summary of Claimed Subject Matter

A straw chopper 40 has a rotor 44 in a housing 42. The rotor 44 has several mounting locations 46 for receiving chopper blades 48. The housing has an inlet 50 for receiving crop material and an out let 52 for discharging chopped crop material back to the field.

The rotor has paddle blades 60 which comprise blades 70, each with a leading edge 72, a trailing edge 74, a first end 76 and a second end 78. The first end has a mounting assembly 80 that comprises a mounting hole. This mounting assembly 80 allows the blade to be pendulously mounted to mounting location 46 on rotor 44. Second end 78 of the blade has a tip 82. The leading edge 72 has a sharpened cutting edge 84 that extends from tip 82 toward first end 76. Adjacent to the first end 76 is a paddle 86 extending at an angle from the plane of blade 70. Paddle 86 extends in a perpendicular direction from blade 70 and is integral with blade 70.

See Figure 3, 4 and 2, below, which show one embodiment of the blade.





Ground of Rejection to be Reviewed on Appeal

1. Does the Gaeddert reference (USPN 3,717,062) anticipate the subject matter of claims 1, and 3-11? In particular:

(a) Claim 1 recites a straw chopper blade "pendulously mounted" to a "rotor" (claim 1) or to a "straw chopper" (claims 5 and 9), the blade having a "paddle" extending from a "leading edge" of the blade. Do Gaeddert's legs 56, which are

welded to the Gaeddert rotor form the claimed pendulously mounted paddle?

(b) Are the Gaeddert legs 56 a "paddle" part of a "straw chopper blade" in which the "paddle" is "positioned between the mounting hole [of the blade] and the cutting edge [of the blade]" as recited in claim 5?

(c) Is the paddle an "integral paddle bent from a flat blade ... between the mounting hole and the cutting edge" as recited in claim 9?

2. Does the Gaeddert reference (USPN 3,717,062) make the subject matter of claims 9-14 obvious? In particular:

(a) Is there any suggestion or motivation in the art to form the blade and the paddle integral with one another as recited in claim 9?

Argument

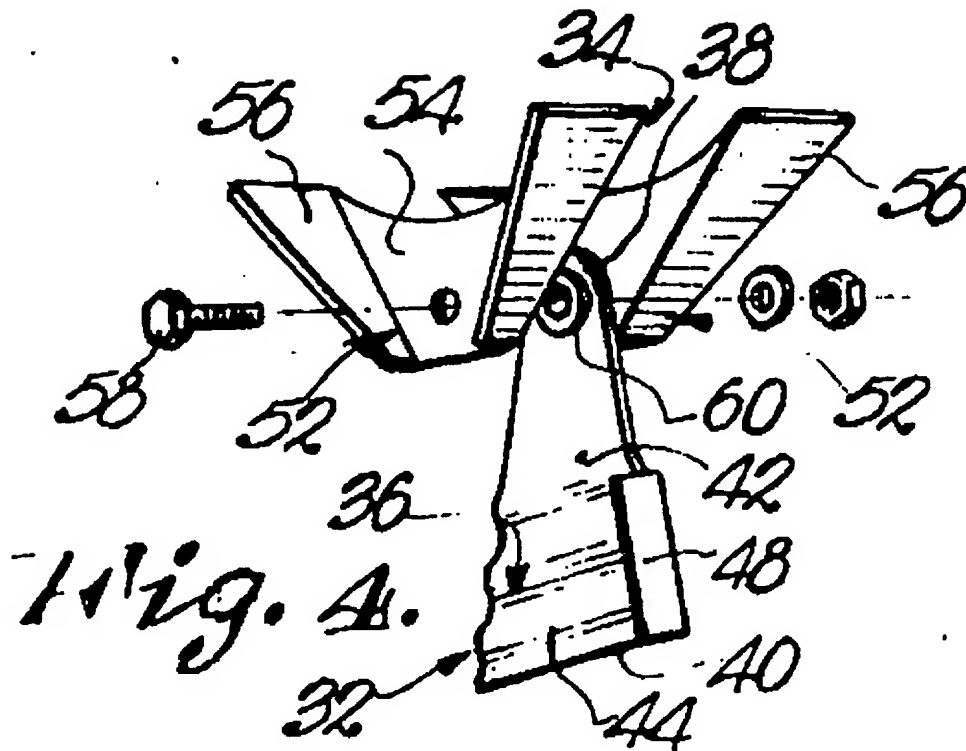
The Gaeddert Reference:

Gaeddert (the sole prior art reference used against all the claims in the subject application) discloses a "blade" (aka "element") 32 (col. 4, ln 28) that is pivotally coupled at its inner end 38 to a "sturdy base" (col. 3, ln 7) made of a pair of opposed saddles 52. These saddles include a panel 54 and supporting legs 56 that are welded to hub 30 of rotor 10. *See generally*, col. 2, ln 55 to col. 3 ln 19.

Gaeddert discloses a pivot bolt 58 that extends through a hole in blade 32 and into flanking saddles 52 so blade 32 can "swing about an axis" (col. 2, ln. 57-58) and "free swing[] ... during rotation of the rotor 10" (col. 3, ln 15-18). See also Figures 3 and 4 from Gaeddert,



below.



Grounds 1(a):

Claim 1:

The Examiner interprets both the Gaeddert blade 32 *and* the “sturdy base” (i.e. saddle 52) on which it is pivotally mounted, to be the “blade” of independent claims 1, 5 and 9. The Examiner also interprets the Gaeddert legs 56 welded to the Gaeddert rotor as the claimed “paddles” of the claimed “straw chopper blade”.

Claim 1 claims a “straw chopper blade” having a “blade mounting assembly” at a first end of the blade “for pendulously mounting the blade to a straw chopper”. The blade also has a “paddle” that “extends at a perpendicular angle ... from ... the leading edge” of the blade.

The Examiner identified legs 56 as the claimed “paddle” of the “blade”. Legs 56, however, are not pendulously mounted to anything, but are welded

directly to the hub of Gaeddert's rotor 10.

In fact, Gaedderts' legs 56 provide part of the "sturdy base" to which Gaeddert's swinging blade 32 is pivotally coupled.

Gaeddert's blade 32 does have a "flat sheet metal vane 48" which does extend from blade 32.

Gaeddert vane 48, however, extends from the **trailing** edge of Gaeddert blade 32, whereas the claimed paddle extends from a "**leading** edge" of the blade.

Claim 5:

Claim 5 claims a straw chopper that has a rotor to which a plurality of straw chopper blades are "pendulously mounted". Each straw chopper blade includes a "paddle" that "extends ... from the leading edge" of the straw chopper blade.

The Examiner identified legs 56 as the claimed "paddle" of the "blade". Legs 56, however, are not pendulously mounted to anything, but are welded directly to the hub of Gaeddert's rotor 30.

In fact, Gaedderts' legs 56 provide part of the "sturdy base" to which Gaeddert's swinging blade 32 is pivotally coupled.

As noted above regarding claim 1, Gaeddert's blade 32 does have a "flat sheet metal vane 48" which does extend from blade 32.

Gaeddert vane 48, however, extends from the **trailing** edge of Gaeddert blade 32, whereas the claimed paddle extends from a "**leading** edge" of the blade.

Claim 9:

Claim 9 claims a "straw chopper blade" having a "flat blade" with a "leading edge" from which an "integral paddle" is "bent". A "mounting hole" is provided on the flat blade "for pendulously mounting the blade to a rotor".

Unfortunately, legs 56, which the Examiner identified as the claimed "paddles", are welded to Gaeddert's rotor. They are the support for

Gaeddert's swinging blade 32, not the blade itself. They therefore cannot be the claimed "paddles" that are "bent" from a "flat blade" that is configured to be "pendulously mounted" to a rotor. Assuming *arguendo* that they are "bent" from any structure, they are "bent" from panel 54, which is also welded to the rotor.

As noted above regarding claims 1 and 5, Gaeddert's blade 32 does have a "flat sheet metal vane 48" which does extend from blade 32.

Gaeddert vane 48, however, extends from the ***trailing*** edge of Gaeddert blade 32, whereas the claimed paddle extends from a "***leading*** edge" of the blade.

Grounds 1(b) :

Claim 5

Claim 5 claims a straw chopper that has a rotor to which a plurality of straw chopper blades are "pendulously mounted". Each straw chopper blade includes a "paddle" that "extends ... from the leading edge" of the straw chopper blade. The paddle is further "positioned between the mounting hole and the cutting edge [of the blade].

Gaeddert legs 56, identified by the Examiner as the "paddle", are not positioned between (a) the mounting hole or bolt 58 on Gaeddert's blade 32 and (b) edge 46 on Gaeddert's blade 32.

The Examiner identified Gaeddert bolt 58 as the mounting assembly, and edge 46 of Gaeddert blade 32 as the cutting edge.

However, leg 56, which the Examiner identifies as the claimed "paddle" is not "positioned between" bolt 58 and edge 46.

As a component of the base to which the blade is pivotally coupled, Gaeddert legs 56 are off to one side and form no part of Gaeddert blade 32, its edge 46 or its mounting hole.

Grounds 1(c):

Claim 9:

Claim 9 recites that the “paddle” is an “integral paddle bent from the flat blade ... between the mounting hole and the cutting edge”.

Legs 56, which the Examiner calls the claimed paddles, are not bent from the Gaeddert blade between the blade cutting edge (which the Examiner identifies as item 46 on blade 32) and the blade mounting hole (the hole in the blade that receives bolt 58).

Gaeddert legs 56 extend instead from Gaeddert panel 54 which is welded to the Gaeddert rotor and which is not pivotally coupled to the Gaeddert rotor.

Furthermore, Gaeddert legs 56 (the Examiner’s “paddle”) are pivotally coupled to Gaeddert blade 32 (the Examiner’s “flat blade”) with bolt 58, and are therefore not “integral” with the blade as the “paddle” is claimed to be.

The Examiner admits that legs 56 and blade 32 are not integral in his rejection under Section 103, discussed immediately below.

Grounds 2(a)

Claim 9:

In his rejection under Section 103, the Examiner admits that Gaeddert’s blade and paddle are separate components and therefore are not integral.

However, the Examiner believes they could be made integral (a) to “better reinforce the shank [42]” of Gaeddert blade 32, and (b) because making two things into one involves only routine skill in the art. The Applicant respectfully disagrees.

First, in order to make Gaeddert legs 56 (the Examiner’s paddle) integral with Gaeddert blade 32 (the Examiner’s blade), one is compelled to eliminate the pivot joint formed of bolt 58 and bushing 60 that let the

Gaeddert blade 32 pivot with respect to saddles 52 (and legs 56 and rotor 10).

But if one eliminates these pivoting structures, *the resulting device would no longer read on the claims*. The “blade mounting assembly” of claim 9 for “pendulously mounting the blade to a rotor” would be eliminated.

Second, there is no teaching in the prior art to make the Gaeddert blades integral with the saddle (i.e. the legs 56) on which they are mounted.

The reason that straw choppers have pivoting blades is to prevent damage to the machine. Straw choppers rotate so fast that the blades fly outward under centrifugal force so strongly that they can tear loose from the rotor if not anchored firmly. Gaeddert himself notes that plant and other material thrown into a straw chopper often includes rocks (co. 4, lines 37-40). These indigestible chunks will damage the straw chopper if they impact blades extending from the rotor that are rigid and fixed.

For that reason, modern straw choppers use pendulous or swinging blades that extend outward under centrifugal force to chop the lightweight straw and plant matter. Larger chunks that impact the blades will deflect the blades, not break them off. As a matter of fact, Gaeddert points to exactly this problem, noting that “Centrifugal forces acting on the blades 32 will not pull the structures off the hub 30 ***nor will they be torn loose from the hub 30 by the impact on the material being chopped.***” (emphasis added). See Gaeddert, col. 4, lines 28-31. The pivotal couplings between the blade 32 and the legs 56 that mount them to the rotor provide this ability not to be torn off.

In short, there is no teaching in Gaeddert or elsewhere to “reinforce” the shank of the straw chopper blades by fixing them rigidly (or forming them integral with) Gaeddert’s welded-on-the-rotor mounting legs 56.


Any fees or charges due under 37 CFR 1.17(f) or otherwise due as a result of filing of the present paper may be charged against Deposit Account 04-0525. Two duplicates of this page are enclosed.

Respectfully,


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:
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on: 15 June 2006
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Deere & Company

Signature
15 June 2006
Date

Appendix

1. A straw chopper blade comprising:
 - a blade having a leading edge and a trailing edge,
 - the blade also having a first end, the first end having a blade mounting assembly for pendulously mounting the blade to a straw chopper,
 - the blade also having a second end remote from the first end, the second end being provided with a tip,
 - a sharpened cutting edge is formed on the leading edge at the second end and extends from the tip towards the first end; and
 - the first end further having a paddle that extends at a perpendicular angle from a plane of the blade from the leading edge thereof.
3. The straw chopper blade as defined by claim 1 wherein the trailing edge of the second end is provided with a second sharpened cutting edge extending from the tip towards the first end.
4. The straw chopper blade as defined by claim 3 wherein a second paddle extends at an angle from the trailing edge of the first end predominantly perpendicular to the plane of the blade.
5. A straw chopper for an agricultural harvesting machine comprising:
 - a rotor having a plurality of mounting locations;
 - a housing enclosing the rotor, the housing having an inlet for receiving agricultural material and an outlet through which chopped agricultural material is expelled;
 - a bank of stationary blades are mounted to the housing;
 - a plurality of straw chopper blades are pendulously mounted to the rotor at the mounting locations,
 - each straw chopper blade having a leading edge and a trailing edge, the blade also having a first end with a blade mounting assembly for pendulously mounting the blade to the rotor, the blade also having a second end remote from the first end, the second end being provided with a tip, a sharpened cutting edge is formed on the leading edge at the second end and extends from the tip towards the first end and a paddle also extends at an angle from the leading edge of the first end wherein the paddle is positioned between the mounting hole and

the cutting edge.

6. The straw chopper as defined by claim 5 wherein the blade defines a plane and the paddle is predominantly perpendicular to the plane.

7. The straw chopper as defined by claim 6 wherein the trailing edge of the second end is provided with a second sharpened cutting edge extending from the tip towards the first end.

8. The straw chopper as defined by claim 7 wherein a second paddle extends at an angle from the trailing edge of the first end, predominantly perpendicular to the plane of the blade.

9. A straw chopper blade comprising:

- a flat blade having a leading edge and a trailing edge and having a first end and an opposite second end;

- a mounting hole is provided on the first end for pendulously mounting the blade to a rotor;

- a sharpened cutting edge is formed on the leading edge at the second end, the flat blade defining a plane;

- an integral paddle is bent from the flat blade at the leading edge of the first end between the mounting hole and the cutting edge formed on the leading edge at the second end and extends at an angle from the plane defined by the flat blade.

10. The straw chopper blade as defined by claim 9 wherein the rotor is a straw chopper.

11. The straw chopper blade as defined by claim 10 wherein the integral paddle is adjacent the mounting hole.

12. The straw chopper blade as defined by claim 11 wherein the paddle extends predominantly perpendicular to the plane defined by the flat blade.

13. The straw chopper blade as defined by claim 12 wherein the trailing edge of the first end is provided with a second sharpened cutting edge.

14. The straw chopper blade as defined by claim 13 wherein a second paddle is integral with

and bent from the flat blade at the first end thereof at an angle from the trailing edge predominantly perpendicular to the plane of the blade.